CONFERENCE: 11 th EUROPEAN NUTRITION CONFERENCE FENS MADRID 2011

TITLE: EFFECT OF A CASEIN HYDROLYSATE CONTAINING NOVEL PEPTIDES IN HYPERTENSIVE SUBJECTS

TYPE: Abstract

AREA: Innovation in Food for Optimal Nutrition

FORMAT: ORAL

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EFFECT OF A CASEIN HYDROLYSATE CONTAINING NOVEL PEPTIDES IN HYPERTENSIVE SUBJECTS

INTRODUCTION

Enzymatic hydrolysis of food proteins is an efficiently strategy to produce biological active peptides. Our group identified two alphas1-casein fragments with potent angiotensin-converting enzyme-inhibitory activity in vitro and antihypertensive effect and additional cardiovascular benefits in spontaneously hypertensive rats (SHR). Therefore, these results might be translated to humans to consider these peptides as a functional food ingredient to prevent hypertension with additional cardiovascular benefits.

OBJETIVES

To evaluate the antihypertensive activity of a food-grade ingredient containing novel peptide sequences in humans.

METHOD/DESIGN

"Stability of the ingredient to atomisation, pasteurisation, incorporation to fermented products and dose in the different batches prepared for the human trial was evaluated by mass spectrometry". The human trial was developed using a yoghurt drink enriched with the hydrolysate. A total of 71 hypertensive subjects (placebo and active substance groups) and 50 normotensive volunteers (only active substance) were enrolled. All subjects consumed one liquid yogurt (150 ml) per day during 6 weeks.

RESULTS

The active peptides were stable during the processes of atomization, homogenization and pasteurization. When the hydrolysate was incorporated into liquid yoghurt, no significant reduction of peptides was detected during the shelf-life of the product. The amount of the active peptides in the ingredient was between 2.5-3.1 mg/g hydrolysate, and the dose of active peptides administered during the trial ranged between 5.8 to 7.3 mg. After 6 weeks of consuming the yogurt containing the active ingredient, the hypertense patients showed a change in their

systolic blood pressure of -12.5 mmHg with a confidence interval between 4.7 and 20.2 mmHg (pd0.05). It has to be highlighted that no significant changes in blood pressure were detected in both the placebo and the normotensive groups.

CONCLUSIONS

The beneficial effect of an active casein hydrolysate on hypertensive subjects has been demonstrated.

KEY WORDS

MILK PEPTIDES, HYPERTENSION, CLINICAL TRIAL